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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/654,619  
Filing Date: September 03, 2003  
Appellant(s): LEWIN ET AL.

Dean M. Munyon, Reg. No. 42,914  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed September 11, 2009 appealing from the Office action mailed January 15, 2009.

The appeal brief is filed in the new format under the revised BPAI final rule before the effective date of the BPAI final rule. The Office published the BPAI final rule to amend the rules governing practice before the BPAI in ex parte patent appeals. See *Rules of Practice Before the Board of Patent Appeals and Interferences in Ex Parte Appeals; Final Rule*, 73 FR 32938 (June 10, 2008), 1332 Off. Gaz. Pat. Office 47 (July 1, 2008). However, the effective date for the BPAI final rule has been delayed. See *Rules of Practice Before the Board of Patent Appeals and Interferences in Ex Parted Appeals; Delay of Effective and Applicability Dates*, 73 FR 74972 (December 10, 2008). In the notice published on November 20, 2008, the Office indicated that the Office will not hold an appeal brief as non-compliant solely for following the new format even though it is filed before the effective date. See *Clarification of the Effective Date Provision in the Final Rule for Ex Parte Appeals*, 73 FR 70282 (November 20, 2008). Since the appeal brief is otherwise acceptable, the Office has accepted the appeal brief filed by appellant.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

U.S. Patent Application Serial No. 11/484,797 is a continuation of the present application. No final decision has been issued by the Board or a Court, and no significant interlocutory decision has been issued by the Board or a Court in this case.

U.S. Patent Application Serial No. 10/430,480 is a copending application having at least one common inventor with the present application and having a disclosure that partially overlaps with the disclosure of the present application. U.S. Patent Application Serial No. 10/430,480 is currently pending on Appeal before the Board as Appeal Number 2009-6168. No formal decision has been issued by the Board or a Court, and no significant interlocutory decision has been issued by the Board or a Court in this case.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The statement of the status of claims contained in the brief is correct.

**(8) Evidence Relied Upon**

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

6,178,161	TERRY	01-2001
5,999,565	LOCKLEAR, JR. ET AL.	12-1999
7,002,941	TREADAWAY ET AL.	02-2006
5,365,551	SNODGRASS ET AL.	11-1994

**(9) Grounds of Rejection**

The following grounds of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 8-11, 38-39, 41, 48-51, and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry et al (US 6,178,161), in view of Locklear, Jr. et al (US 5,999,565), hereinafter Locklear.

Regarding claims 8-11, 38-39, 48-51 and 53-55, Terry discloses a method of transmitted data, comprising:

receiving Ethernet frames from an Ethernet source (Ethernet (ENET) frames are communicated between 12 and 14 using point to point protocol; Figure 1, col. 5: line 48 – col. 6: line 6);

storing the Ethernet frames for subsequent forwarding (the master and slave modem buffer Ethernet frames for sending either upstream to the master modem or downstream to the slave modem; col. 6: lines 7-10); and

encapsulating the previously stored Ethernet frames within a plurality of frames, wherein each Ethernet frame is encapsulated entirely within a respective frame of the plurality of frames (col. 1: lines 52-55 and col. 6: lines 40-52; Figure 2).

Terry does not explicitly disclose transmitting the plurality of frames over the VDSL facility.

Locklear teaches transmitting the plurality of frames over the VDSL facility (server 16 detects the frames and establishes XDSL communication protocols for transmitting the frame; col. 5: lines 7-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Locklear's method of using modifiable VDSL modems in Terry's system, motivated by the need of providing greater connectivity and better access for data communications at higher rates.

Regarding claim 10, Terry discloses a method of extracting Ethernet frames from a VDSL facility comprising:

receiving frames wherein a given Ethernet frame is encapsulated entirely within a received frame (Ethernet (ENET) frames are communicated and encapsulated; Figures 1-2, col. 1: lines 52-55 and col. 5: line 48 – col. 6: line 52);

extracting Ethernet frames from the received frames (col. 8: lines 34-63);

storing the frames for subsequent forwarding (the master and slave modem buffer Ethernet frames for sending either upstream to master modem 12 or downstream to slave modem 14; col. 6: lines 7-10); and

forwarding the frames to an Ethernet source (the master and slave modem buffer Ethernet frames for sending either upstream to master modem 12 or downstream to slave modem 14; col. 6: lines 7-10).

Terry does not explicitly disclose the received frame is from a VDSL facility.

Locklear teaches receiving the plurality of frames over the VDSL facility (data frames are transmitted and received between VDSL modems 50 and Ethernet interface 68; Figure 2, col. 5: line 58 – col. 6: line 25, and col. 8: 34-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Locklear's method of using modifiable VDSL modems in Terry's system, motivated by the need of providing greater connectivity and better access for data communications at higher throughput rates.

Regarding claims 9, 11 and 41, Terry-Locklear also discloses Ethernet source comprises a 10BaseT Ethernet source (col. 5: lines 55-57; Terry).

3. Claims 30-32, 34-36, 40, 42-44, 46-47 and 52-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry-Locklear, and further in view of Treadaway et al (US 7,002,941).

Regarding claims 30, 34 and 40, Terry-Locklear does not explicitly disclose the Ethernet source comprising a 100BaseT Ethernet source.

Treadaway teaches the Ethernet source comprising a 100BaseT Ethernet source (col. 8: lines 29-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Terry-Locklear's method of transmitting data packet in Treadaway's system, in order to provide a smooth and efficient method of transferring digital data.

Regarding claims 31, 35 and 42, Terry-Locklear discloses substantially all the claimed limitation, except the encapsulating comprises inserting a length field prior to the Ethernet frame.

Treadaway also discloses the encapsulating comprises inserting a length field prior to the Ethernet frame (col. 13: lines 39-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Treadaway's method of inserting a length field prior to Ethernet frame in Terry-Locklear's system, in order to provide a traditional low cost and low complexity associated with Ethernet technology while achieving QoS.

Regarding claims 32, 36 and 43, Terry-Locklear-Treadaway also discloses inserting a preamble prior to the length field (col. 13: lines 39-46; Treadaway).

Regarding claim 44, Terry-Locklear-Treadaway also discloses the preamble comprises a plurality of bytes exhibiting high autocorrelation properties (Table 1, col. 14; Treadaway).

Regarding claims 46-47, Terry-Locklear-Treadaway also discloses the first frame excludes an Ethernet preamble that preceded the Ethernet frame on an Ethernet medium (col. 13: lines 39-46; Treadaway).

Regarding claims 52 and 56, Terry-Locklear-Treadaway also discloses encapsulating a plurality of Ethernet frames in respective frames, wherein the plurality of Ethernet frames to be of variable lengths (col. 14: lines 16-39; Treadaway).

4. Claims 33, 37 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry-Locklear-Treadaway, in view of Snodgrass et al (US 5,365,551).

Terry-Locklear-Treadaway does not explicitly disclose the preamble comprising a Barker code.

Snodgrass teaches the preamble comprising a Barker code (col. 10: line 65 – col. 11: line 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Snodgrass's method of using the Barker code in Terry-Locklear-Treadaway's system, motivated by the need of synchronizing the transmitted information.

#### **(10) Response to Argument**

**First Ground of Rejection:** Claims 8-11, 38-39, 41, 48-51 and 53-55 are rejected under 35 U.S.C. §103(a) as being unpatentable over Terry, in view of Locklear.

Regarding claim 8, Applicant's essentially argued that: (a) The combination of Terry and Locklear does not teach the features of the claims; (b) Locklear Does not Teach Encapsulating Ethernet Frames in VDSL Frames; and (c) Fixed-Size VDSL Frames Cannot Accommodate Ethernet Frames.

#### **(a) The combination of Terry and Locklear does not teach the features of the claims**

In response to Applicant's argument that "Locklear includes no relevant teachings that would permit an ECAP frame to be transmitted over a VDSL facility" (See pages 19-20), Examiner respectfully disagrees.

Terry teaches encapsulating an entire Ethernet frame into an ECAP frame (see Figure 2),

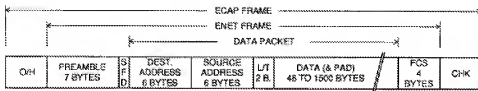


Fig. 2

and transmitting the ECAP frames over a communication facility using modems (see Figure 1).

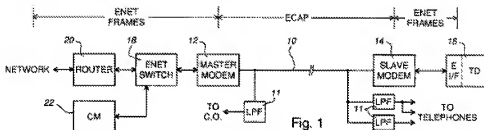


Fig. 1

Though Terry includes no discussion of transmitting the frames on VDSL facilities, Locklear offers the missing element (Figure 1: transmit and receive suitable frames between modems 50 of servers 16 and devices 12 via twisted pair 22). Locklear teaches receiving frames or packets such as Ethernet, ATM, HDLC, or any other suitable data communications frame format; and based on the received frames, selecting an available **modem** in its modem pool, retrieving stored line characteristics, training the associated twisted pair line, and establishing XDSL communication protocols for the transmission of the frames (col. 5: lines 7-21). Locklear

also teaches that the XDSL includes ADSL, HDSL or VDSL (col. 3: lines 59-65, col. 5: lines 60-63).

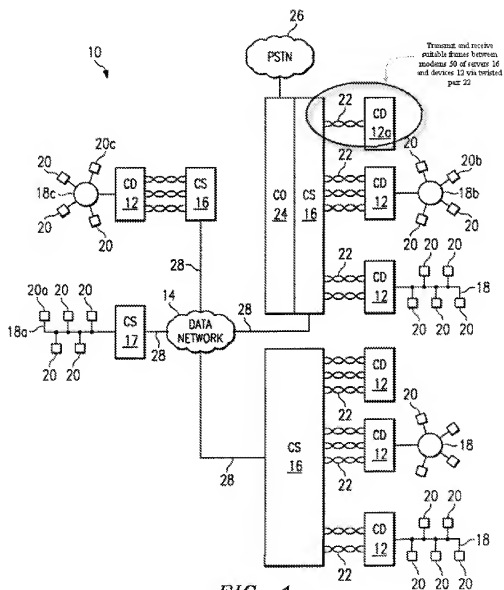
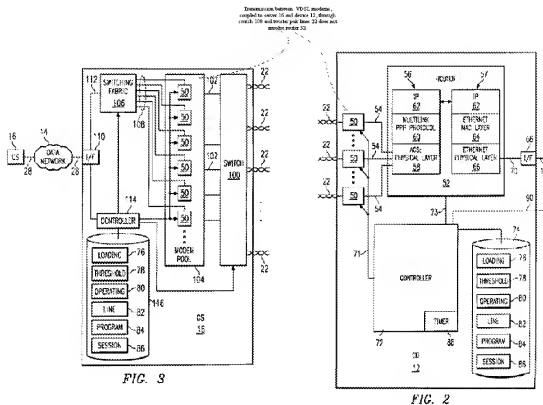


FIG. 1

Locklear also teaches device 12 includes modems 50 coupled to twisted pair lines 22. Modems 50 transmit and receive data using any suitable digital subscriber line technology, such as ADSL, **VDSL**, or HDSL, referred to generally as XDSL. Each modem 50 includes an associated twisted pair line 22 and data line 54. In operation, modem 50 receives inbound or downstream communication from server 16 on twisted pair line 22, and places the resulting data in an appropriate protocol on data line 54 for delivery to router 52. Modem 50 also receives outbound or upstream communication on data line 54, and prepares the data for delivery to server 16 using twisted pair line 22 (col. 5: lines 58-67).

Locklear also teaches server 16 includes switch 100, which couples twisted pair lines 22 to modem pool 104 using lines 102. Modems 50 in modem pool 104 are of similar design and operation as modem 50 in device 12 and convert signals in an appropriate XDSL communication protocol into digital data in an appropriate digital protocol. Modems 50 pass the converted signals to a switching fabric using lines 108. Switching fabric 106 may be any type of switch in hardware or software that communicates information between modems 50 and interface 110 (col. 7: lines 20-37).

In operation, server 16 receives inbound or downstream data associated with a session from data network 14 at interface 110 coupled to line 28, passes the data to one or more modems 50 into modem pool 104 servicing the session using switching fabric 106, and communicates the data from modems 50 to associated twisted pair lines 22 through switch 100. Server 16 receives outbound or upstream data associated with the session on one or more modems 50 coupled to switch 100 and twisted pair lines 22, and passes the data through switching fabric 106 into interface 110 for transmission to data network 14 (col. 7: line 65 - col. 8: line 8).



As clearly shown above, Locklear teaches the transmission between two set of VDSL modems 50 coupled to server 16 and device 12 without the need of going through router 52 simply because there is no conversion is needed, i.e., both modems are of the same communication protocols, VDSL. Thus obviously, the frames at modem 50 of server 16 would not have to be stripped down to IP format and encapsulated in order to be transmitted to the modem 50 of device 12, as Applicant's alleged.

**(b) Locklear Does not Teach Encapsulating Ethernet Frames in VDSL Frames**

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Encapsulating Ethernet Frames in VDSL frames) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Further, Applicant's presented his arguments against the references individually, but one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, it is noted Locklear was not relied upon to show "Encapsulating Ethernet Frames in [a plurality of] Frames." Rather, as shown above, Terry discloses a method essentially comprising receiving an Ethernet frame from an Ethernet source and encapsulating the Ethernet within an ECAP frame. Locklear teaches what Terry fails to recite, i.e., transmitting the ECAP frames over a VDSL facility by establishing an appropriate XDSL communication protocol (Locklear; col. 5: lines 7-21).

**(c) Fixed-Size VDSL Frames Cannot Accommodate Ethernet Frames**

In response to applicant's argument that since Terry's ECAP frames are variable length frames and XDSL frames (as taught by Locklear) are fixed size frames, thus the teaching of Terry and Locklear are incompatible because at least some XDSL frames would be larger than the XDSL standards permit (See pages 22- 23), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary

reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, Terry teaches encapsulating an Ethernet frame in an ECAP frame such that short frames are not only permitted but can be desirable because they reduce the amount of information must be communicated via the telecommunication line (col. 7: lines 35-44; Terry).

Thus, even if what Applicant's contented were correct, i.e., only the "encapsulated Ethernet frames" (as taught by Terry) that are in compliant with the XDSL standards would be successfully transmitted over Locklear's XDSL facility, it would have been obvious to one of ordinary skill in the art at the time the invention was made to encapsulate Terry's Ethernet frames in such a way to comply with the XDSL standards to ensure the application can be applied across the board and hopefully, resulted in a broader market.

Claims 10, 38, 48 and 53 are rejected under the same logic.

**Second Ground of Rejection: Claims 30-32, 34-36, 40, 42-44, 46-47, and 52-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry, in view of Locklear, and further in view of Treadaway.**

Applicant's essentially argued that (a) Treadaway does not cure the deficiencies in Terry-Locklear combination with regard to the claims on which claims 30-32, 24-26, 42-44, 46-47 and 52-56 depend; and (b) Treadaway's frames, similar to Terry's frames, are large enough to

encapsulate the Ethernet frame, thus is not obvious to combine Treadaway's frame with Locklear's teaching related to XDSL frames.

Examiner respectfully disagrees.

**(a) Treadaway does not cure the deficiencies in Terry-Locklear combination with regard to the claims on which claims 30-32, 24-26, 42-44, 46-47 and 52-56 depend:**

It is noted that Treadaway is only used to show the well known Ethernet source of 100BaseT, not any deficiencies in the Terry-Locklear combination as Applicant's alleged.

**(b) Treadaway's frames, similar to Terry's frames, are large enough to encapsulate the Ethernet frame, thus is not obvious to combine Treadaway's frame with Locklear's teaching related to XDSL frames:**

It is again noted Treadaway is only used to show the well known Ethernet source of 100Base T, not the obviousness of combining Treadaway's frame with Locklear's teaching relating to XDSL frames. However, as presented above, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Thus, even if what Applicant's contented were correct, i.e., only the "encapsulated Ethernet frames" (as taught by Treadaway) that are in compliant with the XDSL standards would be successfully transmitted over Locklear's XDSL facility, it would have been obvious to one of ordinary skill in the art at the time the invention was made to encapsulate

Treadaway's Ethernet frames in such a way to comply with the XDSL standards to ensure the application can be applied across the board and hopefully, resulted in a broader market.

**Third Ground of Rejection: Claims 33, 37 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry, in view of Locklear, further in view of Treadaway, and further in view of Snodgrass.**

Applicant's essentially argued Snodgrass does not cure the deficiencies in Terry-Locklear-Treadaway.

Examiner respectfully disagrees.

It is noted that Treadaway is only used to show the preamble comprising a Barker code, not any deficiencies in the Terry-Locklear-Treadaway combination as Applicant's alleged.

(The previous Office Action contained a typographical error in which Treadaway was omitted in the combination of Terry-Locklear-Treadaway. The error has since been corrected).

### **Conclusion**

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Van Kim T. Nguyen/

Examiner, Art Unit 2456

Conferees:

/Kenny S Lin/

Primary Examiner, Art Unit 2452

/Bunjod Jaroenchonwanit/

Supervisory Patent Examiner, Art Unit 2456